

# The Environment, the US Military, and Southern Africa

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Since the 1960s, the environment has become a consistent theme in international political discourse, no longer solely the concern of small groups of activists but a mainstream issue. As environmental concerns have gone increasingly global, countries like Norway and Finland have garnered international acclaim for their strong commitment to environmental causes. The government of the United States, in contrast, has been widely and vehemently criticized for its alleged disinterest. The bad press is ironic because the United States is engaged with other countries on a wide range of environmental issues. A significant amount of that involvement occurs in regions of the world where America's policymakers are hard pressed to find any vital interest. Perhaps more surprisingly, the US Department of Defense is an actor in these activities, a situation doubly ironic because America's military leaders have never engaged in serious, protracted debate to define environmentally-related military roles and responsibilities.

This article briefly examines US engagement on environmental issues with the countries of Botswana, Namibia, and South Africa, locating military involvement in the wider context of overall US environmental partnerships. It argues that all these efforts could achieve better results if they were more coherently focused and integrated. While not advocating a lead role for the military, it concludes that a more concerted engagement on environmental issues could make a contribution both to regional stability and to better military-to-military relations with regional partners.

## *The "Environmental Security" Debate*

One interesting new direction that emerged in the late 20th century was the notion of "environmental security," part of a larger debate on the defi-

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inition of security itself. The debate reflected a growing consensus that security should be defined broadly, and that threats to security include any conditions of life—even those emanating from the natural environment—that deprive individuals of generalized well-being.<sup>1</sup> The United Nations has been a key proponent of these broad new conceptualizations, reflecting ideas that have gained political traction in Europe and elsewhere.<sup>2</sup>

Environmentally-oriented definitions of security have resonated more outside the United States than within, but even in America they were given a visible public face in the debates stimulated by Thomas Homer-Dixon in the 1990s, when he called attention to the potential for conflict over environmental degradation and competition for scarce resources, ideas more dramatically popularized by the journalist Robert Kaplan.<sup>3</sup> The ideas remained controversial, and Kaplan was widely accused of sensationalism, but the controversy did focus attention on the politically destabilizing prospects of environmental problems.

Still, despite a growing international unease about environmental problems, there is little real consensus about their definition, dimensions, or solutions. Most environmental issues overlap other equally pressing domains and concerns. There is little consensus that the environment and security should be linked at all, or that environmental issues are worthy of the same priority as national sovereignty, economic growth, or the safety of a population from external attack. Nor are all scholars enthusiastic about a governmental embrace of environmental security agendas. Some are naturally suspicious of the new enthusiasms, worrying that “securitizing environmental issues risks state cooption, colonization, and emptying of the environmental agenda.”<sup>4</sup> For that matter, there is little general agreement on the consistency either of environmental security or the threat to it.<sup>5</sup>

This lack of agreement points to an interesting ideological divide between the developed and the developing world. At issue is the centrality of man to the natural environment. On one end of this spectrum are activists whose environmental perspectives emphasize biodiversity. Their outlook downplays the primacy of human beings, reflecting an eco-centric approach to the environment. On the other are the activists who tend to see human beings—

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and their welfare—as the central feature of environmental issues, reflecting a much more anthropocentric perspective. Like their counterparts elsewhere in the developing world, environmentalists in Africa are more apt to emphasize the centrality of humans and advocate stewardship of the environment to meet human needs.

### ***What Is the “Environment”?***

Some of the difficulty in any comprehensive international effort to address environmental concerns is the simple fact that the conceptual boundaries are so flexible. Environmental issues make up a collection of diverse and heterogeneous subjects that may not always appear closely or inherently related.<sup>6</sup> They could consist of some (or all) of the following:

- Biodiversity (along with issues of conservation)
- Pathogens, vectors, pandemics, and other health threats in the biosphere
- Climate and weather (including climate change, natural disasters, and increases in greenhouse gases in the atmosphere)
- Air, soils, and circumstances that contaminate them
- Oceans, river systems, and hydrology, including watercourses and their modification
- Tectonic plate movements and resulting effects on surface conditions
- Salinity, deforestation, and desertification
- Pollution, wastes, and their disposal
- Landmines and other combat zone detritus
- Ozone depletion in the stratosphere; dangerous levels of ozone in the atmosphere
- Natural resources (including water, marine resources, and energy resources and the issues of sustainability, depletion, and overabundance)
- Food crops, livestock, the technology to enhance them, and their effects on the rest of the natural environment
- Invasive species
- Ambient radiation, natural and manmade

### ***US Public-Sector Actors and African Environmental Issues***

The emphasis on the environment in America’s foreign policy can differ substantially from one presidential administration to another, perceptible in key documents such as the National Security Strategy. The 1998 Clinton document clearly linked security to the environment.<sup>7</sup> That connection has

been much less specific in the National Security Strategies of George W. Bush.<sup>8</sup> The Clinton Administration document tended to see the environment more through the lens of health and human well-being, while the Bush Administration has tended to see it through the lens of sustainable economic development, “clean” energy, and the international response to natural disasters.

For the US government, the creation and implementation of environmental foreign policy occurs within a body of agencies and permanent civil service employees somewhat shielded from changes at the top of the executive branch. These are part of a loose, informal community of practice that also extends out to private-sector scholars and activists at home and abroad. Various US executive branch agencies play some role; however, two primarily are involved in environmentally oriented partnerships: the Department of State and the US Agency for International Development (USAID). The Department of Defense plays a much less prominent but sporadically significant role.

As the agency charged with the nuts and bolts of US foreign policy, the Department of State is responsible for overseeing the Administration’s environmentally-related foreign relations. Within the federal bureaucracy, State serves as the leading partner in the formulation of that policy, in its advocacy among other executive branch agencies, and in broaching it to Congress for funding. The department also serves as a bridge between the executive branch and the broader international communities of scholars and environmentalists.

Within the State Department, responsibility for environmental issues falls particularly to the Bureau of Oceans and International Environmental and Scientific Affairs, generally known by its acronym OES. This bureau represents the country in major international consultations on environmental issues. OES officials participate in bilateral consultations on environmental concerns and maintain a formal presence within US embassies abroad.<sup>9</sup>

Much of the actual responsibility for organizing and implementing US environmental partnerships in the developing world falls to USAID. Officials from this agency also participate in the loose community of practice from which US environmental policy emerges.<sup>10</sup> Its programs are developed in close cooperation with the State Department at the national level, and its field operations are synchronized with US policy objectives. However, below the national level, the structures and programs of the two agencies are stovepiped, with the result that USAID programs often seem to have an autonomous life of their own. (The lack of integration at the field level is reinforced by the differing missions of the two US government agencies: the State Department primarily is concerned with bilateral political relations at the government-to-government level, while USAID programs typically are targeted at the economic and political empowerment of local communities or the

promotion of health and education.) USAID's African missions are small (South Africa being an exception), typically staffed by a couple of officers and several employees hired directly from local communities.<sup>11</sup>

The Department of Defense is the third key US government actor in overseas environmental partnerships, although the scale of its involvements is distinctly less than those of State and USAID. The US military has little comprehensive or sustained environmental focus. It tends to defer substantive concern for environmental issues to a handful of civilian experts and to its engineers, preeminently the US Army Corps of Engineers. Military cells responsible for environmental issues are smaller and less influential within their parent organizations than is true of State or USAID. The environmental content in the education of most military officers is very limited—so limited that it does not exert much influence on the organizational culture. None of the staff colleges or war colleges offers substantial instruction examining the connections between the environment and security.<sup>12</sup> Ironically, despite the heavy environmental dimensions of complex humanitarian emergencies at home and abroad, the US military has never engaged in much internal discussion about environmentally-related roles.

The African environment has not been a key US military concern in the past, and US military environmental partnerships in Africa reflect the vagaries of America's inconsistent political interests. US military environmental actors for southern Africa consist mainly of two small groups: one within the Office of the Secretary of Defense and the other in the US European Command. Several other military entities play minor supporting roles.<sup>13</sup>

Responsibility for environmental issues within the Office of the Secretary of Defense falls to a cell within the Office of the Deputy Under Secretary of Defense for Installations and Environment. Its environmentalists compensate for their lack of numbers and obscure placement by a surprisingly busy agenda of environmentally-oriented projects and oversight activities.<sup>14</sup> They also participate with colleagues from the Department of State and USAID in consultations on regional environmental policy issues. Most of their foreign focus is on relations with US allies in Europe and Asia. In 2005, their only significant involvement in southern Africa was participation in the Environmental Security Working Group in South Africa. These DOD environmentalists were capable and committed, but did not appear in 2005 to have much visibility or impact among the senior officials in the department.

The second US military entity primarily involved in southern African environmental partnerships in 2005 was the US European Command (EUCOM), the military organization responsible for managing US military relations with virtually all European countries and with most African nations. Oversight of EUCOM's foreign environmental involvements was delegated

to an office in its Logistics Directorate. Two individuals there (both civilian employees) were responsible for African environmental interests.<sup>15</sup> Given EUCOM's traditional European focus and the environmentally messy aftermath of the Cold War, it should not be surprising that its primary environmental involvements have been in Europe.<sup>16</sup> In 2005 the command seemed to be displaying a modest interest in African environmental issues. It had just begun to cooperate with its sister Central Command in an annual disaster management exercise held in East Africa. Still, EUCOM's only substantial environmental involvement in southern Africa was participation (along with officials from the US Department of Defense) in the Environmental Security Working Group in South Africa.

### ***Regional Environmental Issues***

The three southern African countries of interest in this article share common borders and an overlapping history, but are culturally and environmentally unique, with individual interests diverging on many points. South Africa dominates the region economically. It had a 2005 population of about 44 million, much larger than that of either Botswana (1.6 million) or Namibia (2 million).<sup>17</sup> It is so different from all other African countries that regional generalizations typically require a caveat for South Africa.

Each of the three countries is relatively prosperous by African standards, but they share many problems common to the developing world, including an inability to fully satisfy the demands of a growing population. Each also shares a unique southern African problem—the highest per capita prevalence of HIV and AIDS in the world.<sup>18</sup> Namibia and South Africa face additional problems of redistributive justice, stemming from colonial-era appropriation of land by white settlers whose descendants still occupy the most productive land. The United States enjoys generally good bilateral relations with each of the three, but military-to-military relations in 2005 were good only with Botswana.

Botswana and Namibia in 2005 were much more like each other than they were like South Africa. Both countries had small populations relative to their land area. Both consisted largely of desert, with very limited arable acreage. Both had politically prominent livestock industries with deep roots in traditional cultures. Water was a critical natural resource and a key issue in internal political dynamics; although, ironically, Botswana's Okavango Delta remained the world's largest area of pristine wetlands.

All three countries have rich wildlife resources and have been making a substantial national investment in wildlife conservation and eco-tourism. In 2005 all confronted significant environmental dilemmas, including a generally dry climate with insufficient water resources for growing populations, a problem compounded by frequent and increasingly serious drought.<sup>19</sup> All were ex-



periencing uncontrolled, rapid urbanization, resulting in escalating amounts of poorly processed human wastes, with associated contamination of land surfaces and water tables. All had industries (especially mining enterprises) that had polluted local areas, and all contended with problems of air and water quality. All had fragile eco-systems under threat from rapid development and destruction of habitat. In each of the three countries, the mass of the population was much more interested in economic opportunity and infrastructural development than protection of the natural environment.

Despite these difficulties, each of these countries had significant, politically influential environmentalist constituencies, and each was committed by public doctrine to the wise stewardship of the environment.<sup>20</sup> The three countries were cooperating with each other and with other southern African nations in a variety of environmental initiatives encouraged by the Southern African Development Community (SADC).<sup>21</sup> The United States enjoyed substantial connections on environmental issues with each, a collaboration in many respects closer than was true of other bilateral relationships. Several are worthy of specific mention here.

#### *Community-Based Management Programs*

Community-Based Natural Resource Management (CBNRM) programs burst onto the southern African scene in the mid 1980s, heavily sponsored by the United States and other foreign donors. These programs sought to empower local rural communities by allowing them to manage the natural resources of the land on which they lived, providing them the right to funnel the economic benefits back into the local community.<sup>22</sup> Though similar in intention and concept, each program differed in local detail and ultimate achievements. By 2005, only the Namibian program had all the earmarks of an unqualified success, and it was the only one in southern Africa still receiving US government funding.<sup>23</sup>

#### *Permanent Okavango River Basin Water Commission*

An environmental issue between Botswana and Namibia erupted in the early 1990s, immediately after Namibia attained its independence from South Africa. The issue was the use of water from the Okavango River, a watercourse that flows south from Angola, crossing Namibia's Caprivi Strip en route to Botswana, a situation ripe with potential for future conflict. The national leaders of both Botswana and Namibia clearly foresaw this danger, however, and established a Joint Permanent Technical Commission to deal with bilateral water issues. In 1994 Angola joined the group to form the Permanent Okavango River Basin Water Commission (OKACOM).<sup>24</sup> This commission has been an interesting African success story of mutual consultation,



conflict avoidance, and coordinated human development. Its evolution has attracted the attention of external donors, environmental groups, and development specialists, and the commission has drawn a considerable amount of foreign assistance, including US development funding.<sup>25</sup>

#### *Transfrontier Conservancies and KAZA*

Somewhat the same point can be made for the advent of transfrontier wildlife conservancies. These began to appear in the 1990s in efforts by southern African nations to jointly manage contiguous national parks and wildlife reserves. From the beginning, their proponents saw them as mechanisms for regional cooperation and human development, reducing the prospect of interstate conflict and contributing directly to the economic development of local communities. By 2005, the most ambitious scheme that had emerged from this new thinking was the Kavango Zambezi (KAZA) Transfrontier Conservation Area initiative, involving five southern African countries—Angola, Botswana, Namibia, Zambia, and Zimbabwe. In 2005, KAZA still was largely a proposal, though intensive multilateral consultations were under way. The United States had allocated modest funding for the program and appeared to be open to further support if the initiative pans out.<sup>26</sup>

#### *The US Military and Biodiversity in Africa*

US military partnerships on environmental issues were at something of a low point in southern Africa in 2005, having been significantly greater in the 1990s. Much of the earlier activity stemmed from the so-called military biodiversity programs. In the early 1990s, Congress had authorized special allocations totaling \$30 million to “encourage African military establishments to [engage] in anti-poaching activities, wildlife protection, and other efforts in support of Africa’s environment.”<sup>27</sup> Botswana and Namibia both received funding under this program. Both invested in light aircraft, light boats, and associated equipment and training. However, when the purchases were completed, the US military interest largely ended as well. By 2005 it was hard to find any evidence that the military biodiversity programs of the 1990s had made any significant long-term difference.

#### *The Individual Countries and Environmental Partnerships*

##### *South Africa*

In 2005, the US diplomatic mission in South Africa was much larger than those in either Botswana or Namibia, and US relations with South Africa were significantly more elaborate. The environmental partnerships likewise were more complex and multifaceted. The programs themselves were managed in a largely autonomous manner by three separate parts of the official US

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mission: the Economic Section of the US Embassy’s core staff, the USAID mission, and the Office of Defense Cooperation (ODC).

Because of South Africa’s relative political and economic importance, the US Embassy had engaged it on a broad range of environmental issues since 1994, often in the form of demarches on episodic environmental concerns. However, since about 2002 the Embassy had overseen two significant environmental partnerships: one involving responses to global climate change, the other related to democratic governance, and more specifically to national environmental law.<sup>28</sup>

The climate change relationships grew out of US efforts to maintain communication with foreign governments on environmental issues in the wake of the US rejection of the Kyoto Protocol in 2001. A conference hosted by South Africa in July 2003 set in motion a series of consultations that were continued in mid-2005, resulting in two-way sharing of researchers, data, facilities, and plans for future exchanges.<sup>29</sup> The US Embassy also engaged the South Africans on greenhouse gas issues, particularly targeting an energy industry dependent on low-grade fossil fuels. A second major area of US Embassy engagement had to do with South African capacity to enforce environmental law. In partnership with the United Kingdom, the US Embassy had sponsored (or cosponsored) conferences and workshops focused on building the capacity of environmental inspectors and state prosecutors.<sup>30</sup>

For its part, the USAID mission in South Africa also has been substantively involved in a variety of collaborative partnerships on environmental issues. In 2005, this agency was the largest single bilateral donor to South Africa (and the second largest overall donor after the European Union). Its primary role had been human development, but it was involved at some level with a variety of initiatives and projects with environmental implications. These included the local mediation of Bush Administration initiatives on global climate change, clean energy, and water for the poor.<sup>31</sup> The Fiscal Year 2005 USAID programs also included allocations of over \$700,000 for other partnerships involving water and sanitation projects, clean energy technologies, efficient energy practices, and efforts to reduce pollution in slum areas.

The third US public sector agency involved in environmental partnerships with South Africa in 2005 was the Department of Defense. Here, as outlined earlier, the chief US actors were the Office of the Secretary of Defense and the US European Command.<sup>32</sup> Overall military-to-military relations between the United States and South Africa were strained, and US security assistance funding to South Africa had been suspended in 2004. Yet while other military partnerships were at a virtual standstill, the environmental partnership seemed to be flourishing.<sup>33</sup> By 2005 a joint US-South African Environmental Security Working Group had produced an international conference on Military Integrated Environmental Management (hosted by South Africa and attended by delegates from about 30 countries), five jointly produced environmental guidebooks, and a number of exchange visits, including various small US training team events on topics related to defense and the environment.<sup>34</sup>

The scope of the military relationship could easily be overstated. It was dwarfed by the USAID programs, both in terms of monies spent and results achieved. However, the environmental connection had maintained a US military engagement with an important regional power at a time when other military relations were difficult. It proved that the two countries could cooperate effectively in a common effort to address regional security issues despite significant political differences.

### *Botswana*

In 2005, US partnerships with Botswana on environmental issues were limited, though seen through the lens of a 15-year period they added up to a substantial amount of money and a surprising variety of different programs. Those occurring between 1990 and 2005 can be captured in five broad categories: Botswana's Community-Based Natural Resources Management (CBNRM) program, transfrontier natural resource conservancies, the management of the Okavango River basin, miscellaneous local workshops and conferences on environmental issues, and military biodiversity. All have garnered significant US support at one time or another. Partnerships in 2005 were intended to support the larger ends of economic development and regional security. Biodiversity was an interest, though a distinctly secondary one.<sup>35</sup>

By 2005, environmental partnerships with Botswana had come down to three major programs:

- Since at least 2001, the US government has supported regional initiatives for development of the Okavango River basin, and USAID initiated an Okavango Basin Project in 2004, involving Angola, Namibia, and Zambia as well as Botswana. USAID has funded this project at just over \$2 million per year since FY 2004.<sup>36</sup>

- By 2005 the US Embassy had become engaged with the government of Botswana and other regional actors in promoting the KAZA initiative described earlier. In 2005, the US Embassy was supporting the government of Botswana with a grant of \$100,000 to facilitate outreach efforts for the project.<sup>37</sup>

- In 2005 the US Embassy in Gaborone also was pursuing an initiative to provide Botswana with benefits under the US Tropical Forest Conservation Act.<sup>38</sup>

By 2005, however, the US military connection to environmental activity in Botswana was only a memory. It had lasted from 1987 to about 1998 and had been tied to supporting the anti-poaching activities of the Botswana Defence Force, providing small boats, light reconnaissance aircraft, radios, spare parts, and equipment training.<sup>39</sup> In 2005, the Defence Force still was using the boats for occasional river patrols, but the impact of biodiversity donations was minimal at best. The military partnership with Botswana in the 1990s had not indicated any deep, abiding US military interest in local environmental issues. It featured no US military involvement in broader environmental concerns or any innovative thinking about potential partnerships. In reviewing the lack of environmental partnerships after 1998, it is easy to conclude that there had been a number of lost opportunities.

Ironically, Botswana represents a unique opportunity. It has a small but very professional military, and many in its officer corps are US-trained. In 2005, military-to-military relations with the country were very good, in sharp contrast to the strained US military relations with neighboring Namibia and South Africa.<sup>40</sup> Botswana's Vice President (and almost certain future President) is a dedicated environmentalist. The Defence Force's military ethos includes a strong emphasis on conservation, a result of almost two decades of very successful and professionally executed anti-poaching operations. In short, Botswana offers an ideal location to explore the possibilities of expanded military, government, and civil-society environmental partnerships.<sup>41</sup>

### *Namibia*

Collaboration between the United States and Namibia on environmental issues in 2005 was centered largely on one very successful activity—the Community-Based Natural Resources Management (CBNRM) program, a key focus of USAID in Namibia. The US Embassy staff closely followed other regional environmental initiatives, and the small US Department of Defense presence in Namibia had been involved in several environmentally-oriented military-to-military programs in the mid-1990s, but the military partnerships had ended by the late 1990s.<sup>42</sup>

Namibia's CBNRM program, also known by its USAID acronym of LIFE (Living in a Finite Environment) was instituted in the early 1990s and

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***“In Africa, environmental variables cannot be ignored in issues of conflict or peace.”***

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was built on a productive collaboration of government, commercial enterprises, and nongovernmental organizations (NGOs). By 2005, the program displayed an impressive cooperation between the government of Namibia, the government of the United States, a powerful consortium of local NGOs, and an increasing number of eager rural communities. It was an unambiguous environmental success, resulting in significantly improved habitat management and dramatic recovery of wildlife populations since the late 1980s. The key Namibian government interest in the program had been poverty reduction, a motivation echoed by the US government, whose involvement reflected US aims to improve the quality of life for rural Africans, promote rural development, and encourage democracy and good governance.<sup>43</sup>

The success of the CBNRM program in Namibia is attributable to a number of factors, but it is hard to ignore the seminal role played by the United States. USAID began to fund the program in 1993, subsequently committing well over \$30 million between 1993 and 2005. According to Namibians, it was the consistency of the US support over the life of the program, along with the dedicated work of a permanent USAID manager (rather than the dollar amount of the contribution), that made the difference. The United States generally had remained focused and engaged, facilitating local initiatives rather than insisting on any particular directions or programs. It also took deliberate advantage of strong civil-society support.<sup>44</sup> The Namibian CBNRM program is a model for other US partnerships with southern African countries on environmental issues, including military-to-military partnerships.

In 2005, bilateral military-to-military programs between the United States and Namibia were at a standstill.<sup>45</sup> Ironically, military-to-military environmental programs had commenced shortly after Namibia attained its independence in 1990 but continued for less than a decade before ending completely. The two most prominent environmental partnerships had been the biodiversity donations and a small program of demining assistance overseen by US Army special operations personnel.<sup>46</sup>

Namibia had been a significant biodiversity beneficiary in the 1990s (receiving some \$2.7 million from the United States). Like Botswana, it elected to spend these funds on light reconnaissance aircraft and small boats for military anti-poaching patrols. Regrettably, by 1997 the light aircraft had

dwindled to three airworthy machines whose main use seems to have been flyovers of the capital during national celebrations. By that point most of the boats apparently were in more-or-less permanent storage in a warehouse.<sup>47</sup>

It is difficult to avoid the conclusion that the military biodiversity program in Namibia constituted an expensive failure, standing in sharp contrast to USAID's CBNRM partnership. This failure may be attributed to a number of factors, including the finite duration of the funding and the inconsistent US military presence. Unlike the CBNRM program, military biodiversity lacked an energetic local private-sector constituency, and it never had a supervisor who could single-mindedly oversee the US contributions over the long term.

In partial contrast, military de-mining was an environmental partnership that had been more productive, though this relationship also was limited to a short period (1995-98). The total US expenditure on de-mining in Namibia was about \$7.3 million.<sup>48</sup> Even as late as 2005, the military-to-military de-mining partnership still was remembered fondly in Namibia. It had addressed a difficult national problem and had generated local expertise that Namibians still seemed to value years after the departure of the US participants. It is worth speculating that military-to-military relations with Namibia may have been much better in 2005 if the United States had found similar environmental issues over which to partner and had made a concerted effort to continue the relationship over time.

### ***Regional Partnerships and Nongovernmental Actors***

In 2005, most of the US government's environmental partnerships in southern Africa consisted of bilateral relationships with individual countries, an approach driven by the nature of the State Department and USAID organizational structures. Since the mid 1990s, the southern Africans had embarked on a large number of regional political and economic partnerships, and US officials clearly appreciated the merits of regional approaches. The US government had supported some substantive multilateral projects, including initiatives like the Permanent Okavango River Basin Water Commission and the transfrontier cooperation.<sup>49</sup> By 2005, regional environmental partnerships had connected a variety of different interests, ranging from biodiversity to health and human development. Interestingly, one category of actors that had not been effectively integrated into the environmental partnerships was the military.

This author's interviews with a wide range of individuals in southern Africa in 2005 suggest that regional militaries could play useful roles. Local environmentalists called attention to the unique capacities of the military in planning and organizing responses to catastrophe, suggesting that military



forces could anticipate various security threats and protect infrastructure more effectively than other government agencies. Regional military establishments already are involved in issues of natural resource sustainment: though the usage is controversial, local environmentalists were aware of Botswana's use of its military in anti-poaching roles. Several were familiar with the US Army Corps of Engineers and suggested that its expertise could be useful to river system management in southern Africa. Interviewees frequently expressed a desire to explore the contributions that military forces could make. They almost universally indicated a readiness to involve military officers in consultations about potential environmental roles. Several local organizations seemed eager to host such consultations.<sup>50</sup> For their part, the regional militaries themselves were cooperating in a variety of ways, though not in environmental roles.<sup>51</sup>

Southern Africa is a promising locale for the exploration of military partnerships on environmental issues. Government and military capacity is greater in this region than in much of the rest of the continent, and southern African governments are committed by public doctrine both to environmental stewardship and to regional cooperation. Compared to the rest of Africa, civil society in this region also contains an unusually committed and capable environmentalist constituency. More to the point, southern African countries have just begun to engage in extraordinary multilateral ventures that link human development, economic growth, and the environment. If these initiatives succeed, they could provide a powerful model for the war-ravaged economies farther north, and it would be unfortunate if a valuable class of potential contributors were overlooked. Environmental security in Africa could serve as a peace multiplier if endorsed and supported by perceptive external partners.<sup>52</sup>

### ***Implications for US Regional Engagement***

Military-to-military environmental partnerships between the United States and countries in southern Africa are a domain pregnant with possibilities. However, in 2005 there was little evident coordination or centralized management of US environmental activities in general, and the Department of Defense activities seemed particularly disconnected from other US government environmental initiatives. The lack of connection between the various US government programs partly was due to agency stovepipes, the amorphous nature of environmental issues, and a resulting failure to conceptualize them as a strategic whole. They were not consistently framed in a regional way. They lacked an overarching concept to unite them, and this is where the notion of environmental security could make a valuable contribution if it were more prevalent in US government thinking, particularly within the Department of Defense.



Environmental issues in Africa consistently overlap other important objectives such as conflict attenuation, public health, and economic development. And while there is no inherent reason why the environment should take precedence over all other issues, environmental variables play key roles in many of Africa's humanitarian dilemmas. In Africa, environmental variables cannot be ignored in issues of conflict or peace.<sup>53</sup>

The current lack of integration and focus in US regional environmental activity is unfortunate, since it compromises the impact of a potentially significant contributor to regional peace and stability. This is doubly unfortunate because the environment and military affairs are two areas in which southern African countries already have partnered effectively, though not in overlapping ways. The environment could serve as a useful additional spill-over issue, setting the stage for productive regional cooperation on an even wider range of issues in the future.<sup>54</sup> The US Department of Defense probably will never be the primary actor in US environmental partnerships, and there are good reasons why it should not be. However, it could help push a more regional focus and forge relations with actors such as USAID and regional military establishments for important niche roles in carefully constructed environmental initiatives.

Over the past decade, US military partnerships on environmental issues with countries in southern Africa have produced very modest results. Several million dollars of US aid spent on military-related biodiversity projects in Botswana and Namibia in the mid-1990s were largely squandered, although a military de-mining partnership in Namibia in the late 1990s was a substantial success. Overall, US military-to-military relationships with South Africa in 2005 were distinctly frosty, yet the Office of the US Secretary of Defense and the US European Command maintained a productive relationship in the Environmental Security Working Group. The environment seemed to be one area in which the US military could collaborate effectively with regional militaries in spite of the vagaries of other political relations. The United States could make a valuable contribution by encouraging dialogue across southern Africa to define the appropriate military contribution to regional environmental security.

The US military itself will struggle with international environmental partnerships until it has a clearer sense of its own environmental roles. The coherence of its partnerships is undermined by a lack of clarity within the US Department of Defense on military responsibilities for environmental issues. Military officers seem aware that potential future conflict scenarios frequently have significant environmental dimensions; yet in 2005 the environment was not a prominent concern within the US Department of Defense and there was little serious debate within US military circles about the military implications of environmental threats.

Finally, and most important, the United States could pursue its environmental interests much more effectively if the national strategy were to identify clear environmental ends that could be prioritized against other interests and matched to appropriate ways and available means. Such a development might be a welcome result of a robust debate within the Department of Defense, and such debate would almost certainly spill over into the other executive branch agencies that deal with environmental concerns. Regardless of who ultimately takes responsibility for creating such a focus, the United States would get more from its environmental investments in southern Africa if they were part of a more coherent strategy for dealing with regional environmental opportunities and threats.

#### NOTES

1. Richard H. Ullman, "Redefining Security," *International Security*, 8 (Summer 1983), 129-53; Jessica Tuchman Matthews, "Redefining Security," *Foreign Affairs*, 68 (Spring 1989), 162-77; Ramesh Thakur, "The United Nations and Human Security," *Canadian Foreign Policy*, 7 (Fall 1999), 52; Terry Terriff et al., *Security Studies Today* (Malden, Mass.: Blackwell Publishing, 1999). For one of the most important theoretical treatments of the topic, see Barry Buzan, Ole Waever, and Jaap de Wilde, *Security: A New Framework for Analysis* (London: Lynne Rienner, 1998). For terminological context, see Peter Stoet, *Human and Global Security: An Explanation of Terms* (Toronto: Univ. of Toronto Press, 1999).

2. European nations, for instance, achieved a milestone agreement on environmental issues in 1998, when the European Union endorsed the Aarhus Convention, guaranteeing citizens' access to environmental information, participation in environmental decisionmaking by their governments, and environmental justice. (Aarhus is the name of the town in Denmark where the consultations occurred.) See European Union, "The Aarhus Convention," <http://europa.eu.int/comm/environment/aarhus/>, and The Human Security Network, <http://www.humansecuritynetwork.org/network-e.php>. The UN endorsement of the new ideas was first strongly evident in a 1992 Report of the Secretary-General (entitled *An Agenda for Peace*) and then in the UN Development Program's *Human Development Reports* of 1993 and 1994, which advocated a "human security" concept. See, inter alia, *An Agenda for Peace: Preventive Diplomacy, Peacemaking and Peacekeeping*, Report of the Secretary General pursuant to the statement adopted by the Summit Meeting of the Security Council on 31 January 1992, <http://www.un.org/Docs/SG/agpeace.html>; *Supplement to an Agenda for Peace: Position Paper of the Secretary-General on the Occasion of the Fiftieth Anniversary of the United Nations*, 3 January 1995, <http://www.un.org/Docs/SG/agsupp.html>; UN Development Program Human Development Report, 1993, <http://hdr.undp.org/reports/global/1993/en>, and UN Development Program Human Development Report, 1994, <http://hdr.undp.org/reports/global/1994/en>. See also UN Office for the Coordination of Humanitarian Affairs, "Advisory Board on Human Security," <http://ochaonline.un.org/webpage.asp?MenuID=9433&Page=1495>.

3. Thomas F. Homer-Dixon, "On the Threshold: Environmental Changes as Causes of Acute Conflict," *International Security*, 16 (Fall 1991), 76-116; *Environmental Scarcity and Global Security* (New York: Foreign Policy Association, 1993); "Environmental Scarcities and Violent Conflict: Evidence from Cases," *International Security*, 19 (Summer 1994), 5-40; *The Environment, Scarcity and Violence* (Princeton, N.J.: Princeton Univ. Press, 1999); "Debating Violent Environments," Woodrow Wilson Institute, *Environmental Change and Security Project Report*, 9 (2003), 89-96; Thomas Homer Dixon and Jessica Blitt, eds, *Eco-violence: Links Among Environment, Population and Security* (Lanham, Md.: Rowan and Littlefield, 1998). Robert Kaplan, "The Coming Anarchy," *The Atlantic Monthly*, February 1994, pp. 44-77.

4. See, inter alia, Marc A. Levy, "Is the Environment a National Security Issue?" *International Security*, 20 (Fall 1995), 35-62; Jyrki Kakonen, ed., *Green Security or Militarized Environment* (Aldershot, Eng.: Dartmouth, 1994); Daniel Deudney, "The Case Against Linking Environmental Degradation and National Security," *Millennium*, 19 (No. 3, 1990), 461-76; and Daniel Deudney, "Environment and Security: Muddled Thinking," *Bulletin of the Atomic Scientists*, 47 (April 1991), 23-28. Not all scholars share the enthusiasm for broadened definitions of "security." See, inter alia, Stephen M. Walt, "The Renaissance of Security Studies," *International Studies Quarterly*, 35 (June 1991), 213; and Robert H. Dorff, "A Commentary on *Security Studies for the 1990s as a Model Core Curriculum*," *International Studies Notes*, 19 (Fall 1994), 27; Simon Dalby,

“Contesting an Essential Concept: Reading the Dilemmas in Contemporary Security Discourse,” in *Critical Security Studies*, ed. K. Krause and M. Williams (London: University College Press, 1997). For additional environmental implications, see also Jon Barnett, *The Meaning of Environmental Security: Ecological Politics and Policy in the New Security Era* (London: Zed Books, 2001), p. 157; and Simon Dalby, *Environmental Security* (Minneapolis: Univ. of Minnesota Press, 2002).

5. For a useful overview of contemporary approaches to environment and security, see Oli Brown, “Environment and Peace: Steady Progress Since 1972,” a contribution to the International Conference on Environment, Peace, and Dialogue among Civilizations, Tehran, Iran, 9-10 May 2005, page 3, available at <http://www.iisd.org>. For interesting discussions of the controversies surrounding the concept of “environmental security,” see Gregory D. Foster, “Environmental Security: The Search for Strategic Legitimacy,” *Armed Forces & Society*, 27 (Spring 2001), 373-95; and Simon Dalby, “Security, Modernity, Ecology: The Dilemmas of Post-Cold War Security Discourse,” *Alternatives*, 17 (Winter 1992), 95-134; and Dalby, *Environmental Security*.

6. See, for example, Thomas Homer-Dixon, “On the Threshold: Environmental Changes as Causes of Acute Conflict,” *International Security*, 16 (Summer 1991), 88; Joe B. Sills et al., *Environmental Security: United Nations Doctrine for Managing Environmental Issues in Military Actions, Volume 1* (Atlanta: Army Environmental Policy Institute, July 2002), p. xi; and James G. Speth, *Red Sky at Morning: America and the Crisis of the Global Environment* (New Haven, Conn.: Yale Univ. Press, 2004), pp. 30-33.

7. William J. Clinton, *A National Security Strategy for a New Century* (Washington: The White House, October 1998), p. 5.

8. See George W. Bush, *The National Security Strategy of the United States of America* (Washington: The White House, September 2002 and March 2006), <http://www.whitehouse.gov/nsc/nss.html>. Interestingly, mid-level Defense Department officials told the author in 2005 that the phrase “environmental security” was strongly discouraged within the Office of the Secretary of Defense.

9. See the OES website, <http://www.state.gov/g/oes>. The “Environment, Science, Technology and Health” officers in US embassies serve as the local representatives of OES on the local US embassy staff. US Department of State information, “Regional Environmental Hub Program,” revised June 2004, <http://www.state.gov/g/oes/hub/>.

10. USAID has developed its own environmental field initiatives, such as its Environmental Assessment Capacity Building Program (ENCAP). For details, see <http://www.encapafrika.org>.

11. See the USAID Environmental Compliance website, [http://www.usaid.gov/our\\_work/environment/compliance/index.html](http://www.usaid.gov/our_work/environment/compliance/index.html). Like the Department of State, USAID maintains individual country “field missions.” In 2005, it had 25 in Sub-Saharan Africa, including those in Namibia and South Africa. It also maintained three regional centers in Africa, one of which was in Botswana. The other two USAID regional centers in Sub-Saharan Africa were in Nairobi, Kenya, and Accra, Ghana. For its local work, USAID typically employs contractors and works in partnerships with local public and private-sector organizations, bringing in environmental scientists, academic institutions, and nongovernmental organizations. Author’s interviews with Keith Kline, Regional Natural Resources Program Manager, USAID Regional Center for Southern Africa, Gaborone, 11 June 2005; Sheila Roquette, Mission Environmental Officer, Program and Project Development Division, USAID, Pretoria, 14 June 2005; Tina Dooley-Jones, Director of Technical Programs, USAID-Namibia, Windhoek, 20 June 2005.

12. This is a serious oversight in the preparation of officials that may eventually be obliged to take a leading role in coping with difficult international environmental threats and issues. There are, however, several gifted environmentalists in the US military educational system, including Lieutenant Colonel (Dr.) John Ackerman of the Air Command and Staff College, Dr. Kent Butts of the Army War College, and Dr. Greg Foster of the Industrial College of the Armed Forces.

13. These include the Defense Security Cooperation Agency (DSCA) and the Army Environmental Policy Institute (AEPI). See the latter’s website, <http://www.aepi.army.mil>. “Other actors” with at least a peripheral interest include a small office in the Logistics Directorate of the Joint Staff in the Pentagon. Author’s interview with William A. J. Mackie, senior civilian official in the Joint Staff Logistics Directorate, 5 March 2005.

14. Among their other activities is the management of a Defense Environmental International Cooperation program begun in about 2000 that currently spends just under \$4 million annually on conferences, studies, and associated travel. “Appendix Q, Defense Environmental International Cooperation,” *Defense Environmental Programs Fiscal Year 2004 Annual Report to Congress*, pp. Q-1, Q-3, <http://www.denix.osd.mil/denix/Public/News/OSD/DEP2004/appQ-deic.pdf>; author’s interview with Ninette Sadusky, ODUSD(I&E), 14 March 2005.

15. Information provided to the author by Tom Schultheis, environmental officer on the staff of the US European Command, 24 February 2005. US military-to-military programs in southern Africa, including those with environmental dimensions, are managed by EUCOM. The actual programs in the field are administered by small Offices of Defense Cooperation (ODCs) stationed in individual countries.

16. For ecological problems in former European communist countries, see, inter alia, Murray Feshbach, *Ecological Disaster: Cleaning Up the Hidden Legacy of the Soviet Regime* (New York: The Twentieth Century Fund Press, 1995); Barbara Jancar-Webster, "Eastern Europe and the Former Soviet Union," in *Environmental Politics and Policy in the International Arena: Movements, Parties, Organizations and Policy*, ed. S. Kamieniecki (Albany, N.Y.: SUNY Press, 1993); Murray Feshbach and Alfred Friendly, Jr., *Ecoside in the USSR: Health and Nature Under Siege* (New York: Basic Books, 1992).
17. Population data are derived from US Central Intelligence Agency, *The World Factbook 2005*, <http://www.odci.gov/cia/publications/factbook/index.html>.
18. Robyn Pharoah, ed., *A Generation at Risk? HIV/AIDS, Vulnerable Children and Security in Southern Africa*, ISS Monograph No. 109 (Pretoria: Institute for Security Studies, December 2004).
19. For details, see inter alia, "Millennium Ecosystems Assessment, 2005," *Ecosystems and Human Well-being: Synthesis* (Washington: Island Press, 2005).
20. For general assessments, see Daniel C. Esty et al., *2005 Environmental Sustainability Index: Benchmarking National Environmental Stewardship* (New Haven, Conn.: Yale Center for Environmental Law & Policy, 2005). South Africa is the home base to a variety of nongovernmental organizations with environmental interests, ranging from the Peace Parks Foundation to the Institute for Security Studies. Botswana and Namibia each have a small but influential environmentalist constituency, evident in Botswana's Kalahari Conservation Society (whose chief patron in 2005 was the country's Vice President) and in Namibia with the Namibian Association of CBNRM Organizations (NACSO), a very effective civil society consortium that worked in close cooperation with the government and foreign donors.
21. See, inter alia, *The Southern African Development Community Protocol on Shared Watercourse Systems* (Gaborone: Southern African Development Community, 1995); and Larry A. Swatuk, "Power and Water: The Coming Order in Southern Africa," in *The New Regionalism and the Future of Security and Development*, ed. B. Hettne, A. Inotai, and O. Sunkel (London: Palgrave, 2001).
22. The creation of CBNRMs was a direct reaction to the scholarly criticisms against coercive, "protectionist," and "statist" wildlife national conservation policies in the developing world. This controversy has produced a rich literature; some of the more prominent works on the topic include: David Anderson and Richard Grove, "The Scramble for Eden: Past, Present and Future in African Conservation," in *Conservation in Africa: People, Policies and Practice*, ed. D. Anderson and R. Grove (Cambridge, Eng.: Cambridge Univ. Press, 1987), pp. 1-12; Clark Gibson, *Politicians and Poachers: The Political Economy of Wildlife Policy in Africa* (New York: Cambridge Univ. Press, 1999); Valentine U. James, *Environmental and Economic Dilemmas of Developing Countries: Africa in the Twenty-first Century* (Westport, Conn.: Praeger, 1994); J. Z. Z. Matowanyika, "Cast Out of Eden: Peasants versus Wildlife Policy in Savanna Africa," *Alternatives*, 16 (No. 1, 1989): 30-35; Roderick P. Neumann, *Imposing Wilderness: Struggles over Livelihood and Nature Preservation in Africa* (Berkeley: Univ. of California Press, 1998).
23. Author's interviews with: Oliver Chapeyama, Director, Enviroplan, Gaborone, 10 June 2005 (Chapeyama, a native of Zimbabwe, was employed by USAID in the 1980s and directly involved in the oversight of the CBNRM programs); Dr. Malan Lindeque, Permanent Secretary, Namibian Ministry of Environment and Tourism, Windhoek, 20 June 2005; Tina Dooley-Jones, Director of Technical Programs, USAID-Namibia, Windhoek, 20 June 2005; and Antonie Esterhuizen, IRDNC coordinator, Kunene region, and former employee of the Namibian Ministry of Environment and Tourism, Windhoek, 22 June 2005.
24. For historical detail, see Isidro Pinheiro, Gabaake Gabaake, and Piet Heyns, "Cooperation in the Okavango River Basin: the OKACOM Perspective," in *Transboundary Rivers, Sovereignty and Development: Hydropolitical Drivers in the Okavango River Basin*, ed. A. Turton, P. Ashton, and E. Cloete (Pretoria: African Water Issues Research Unit, University of Pretoria, 2003), pp. 105-18.
25. For details, see particularly A. Turton, P. Ashton, and E. Cloete.
26. The project's articulated objectives included joint management of regional natural resources, harmonized land use (with scientific monitoring and research), rationalized national policy and legal frameworks, promotion of sustainable tourism, encouragement of public and private sector investment, and joint marketing. Author's interviews with Theodore Pierce, Environmental Officer and First Secretary, US Embassy, Gaborone, 11 June 2005; Malan Lindique, 20 June 2005; Lovemore Sola, Botswana Representative of Conservation International, Maun, 9 June 2005.
27. US Department of State Dispatch 3, No. 1 (1 January 1992), p. 16, <http://dosfan.lib.uic.edu/ERC/briefing/dispatch/1992/html/Dispatchv3no01.html>.
28. Author's interview with Jill Derderian, Environment, Science, and Technology Officer, US Embassy, Pretoria, 8 June 2005.
29. Ibid. The primary US purpose in this conference was to explain the US position on the Kyoto Protocol; a secondary purpose was to find bilateral alternatives. See also US Department of State, "Bilateral Meeting on Climate Change, South Africa, 28-29 July 2003," <http://www.state.gov/g/oes/rls/or/22912.htm>; and US De-

partment of State, "Joint Statement by the United States and South Africa Following the First Meeting of the Bilateral Working Group on Climate Change," <http://www.state.gov/g/oes/rls/or/2004/30083.htm>.

30. Ibid. The US activity in this area was facilitated by \$85,000 in Economic Support Funds for Fiscal Years 2004/05, and included the provision of consultants from US agencies such as the Environmental Protection Agency and the Department of Justice.

31. Author's interviews with Marcia Urquhart Glenn, Senior Advisor-Africa Regional Programs, USAID/South Africa, Pretoria, 14 June 2005; and Sheila Roquitte, Mission Environmental Officer, Program and Project Development Division, USAID, Pretoria, 14 June 2005. See also "USAID, Budget, South Africa," <http://www.usaid.gov/policy/budget/cbj2006/afr/za.html>; "USAID, Environment, Global Climate Change Program: Africa," [http://www.usaid.gov/our\\_work/environment/climate/overview/afr\\_brochure.html](http://www.usaid.gov/our_work/environment/climate/overview/afr_brochure.html); and "USAID, Presidential Initiatives, Clean Energy Initiative," [http://www.usaid.gov/about\\_usaid/presidential\\_initiative/cleanenergy.html](http://www.usaid.gov/about_usaid/presidential_initiative/cleanenergy.html).

32. Two separate, small US military organizations are permanently stationed in South Africa: the Defense Attaché Office and the Office of Defense Cooperation (ODC). The latter office has made the arrangements for bilateral consultations. The ODC belongs to the US European Command (headquartered in Germany) and is responsible for security assistance relationships between the United States and South Africa.

33. Information provided by Duncan Lang, contractor for the Office of the US Secretary of Defense, March 2005. This environmental relationship was a spin-off of the South Africa-US Defense Committee, established in 1997, which included an Environmental Security Working Group. In 2005, the Environmental Security Working Group was jointly chaired by Curtis Bowling, Director for Environmental Readiness & Safety in the Office of the (US) Deputy Under Secretary of Defence for Installations & Environment (ODUSD [I&E]) and Colonel Seakle Godschalk, chief environmentalist for the South African National Defence Force.

34. Information provided by Thomas R. Schultheis, environmental staff officer assigned to the Logistics Directorate, US European Command, March 2005.

35. Author's interviews with Dr. Judy Buttermann, Political Affairs Officer, US Embassy, Gaborone, June 2005; Keith Kline, Regional Natural Resources Program Manager, USAID Regional Center for Southern Africa, Gaborone, 8 June 2005; Theodore S. Pierce, First Secretary/Regional Environment and Health Officer, US Embassy, Gaborone, 10 June 2005.

36. Kline interview, 8 June 2005.

37. This funding was drawn from both Department of State (OES) and USAID sources. Pierce interview, 10 June 2005.

38. Ibid. This innovative 1998 US legislation allows countries (approved by the US government) to divert up to \$10 million of debt repayment per year to local conservation-related projects. See also US State Department, "Tropical Forest Conservation Act," <http://www.state.gov/g/oes/rls/fs/2003/22973.htm>.

39. For additional detail on Botswana's anti-poaching program, see Dan Henk, "Biodiversity and the Military in Botswana," *Armed Forces & Society*, 32 (January 2006), 273-91; and Dan Henk, "The Botswana Defence Force and the War Against Poachers in Southern Africa," *Small Wars and Insurgencies*, 16 (June 2005), 170-91. Botswana was a recipient of military "biodiversity" funding in 1991 and 1993 and used its allocations to purchase *Panther* airboats and 0-2a *Skymaster* light reconnaissance aircraft equipped with forward-looking infrared radar (FLIR) systems. An initial 15 airboats were delivered in June 1993. Twelve aircraft were delivered in June 1994. An addition ten airboats arrived in 1997. This information was extracted from the files of the US Office of Defense Cooperation, Gaborone, reviewed by the author in June 2005. See also "BDF Gets Boats from US Government," *Botswana Daily News*, 9 June 1993, p. 5.

40. The Chief of the US Office of Defense Cooperation in Botswana, Major Andrew Oldenfield, estimated to the author in mid-2004 that fully 75 percent of Botswana's military officers above the rank of major had been trained in the United States at some point in their professional careers.

41. Author's interviews with Nchunga Mushanana, Arabang Kanego, and Stevie Monna, National Conservation Strategy Office, Botswana Ministry of Environment, Wildlife, and Tourism, Gaborone, 6 June 2005; Cornelis van den Post, Staff Scientist at the Henry Openheimer Okavango Research Centre (University of Botswana), Maun, 8 June 2005.

42. Author's interview with Aaron Daviet, Global Affairs Officer, US Embassy Windhoek, 20 June 2005.

43. By 2005, Namibia's CBNRM program featured some 31 natural resource conservancies, each managed by a rural community. Of these, about 11 had become fully self-financing. The private sector contribution to the CBNRM program was overseen by a very active and effective NGO coordination organized and overseen by the Namibian Association of CBNRM Support Organizations (NACSO). See *Namibia's Communal Conservancies: A Review of Progress and Challenges* (Cape Town: Creda, 2004) and *Namibia's Communal Conservancies: An Overview of Status, Progress and Potential of Namibia's Communal Area Conservancies* (Windhoek: NACSO, 2005). Author's interviews with Dr. Malan Lindeque, Permanent Secretary, Namibian Ministry of Environment and Tourism, Windhoek, 20 June 2005; and Patricia Skyer and Shereen Pieterse, locally-hired employees of the USAID mission in Windhoek, 19 June 2005.



44. Esterhuizen interview; Lindeque interview. Namibians called specific attention to USAID employee Chris Weaver who (they said) managed the US program exceptionally competently over a long term. See also Brian T. B. Jones, *Community-based Natural Resource Management in Botswana and Namibia: An Inventory and Preliminary Analysis of Progress*, International Institute for Environment and Development, Evaluating Eden series, 1999, <http://www.ied.org/pubs/pdf/full/7799IIED.pdf>.

45. Almost immediately after Namibia achieved its independence in 1990, the United States opened a small military mission in Windhoek to oversee security assistance relationships. However, by the late 1990s, US interest waned and the small military presence was withdrawn. A military office reopened in the embassy several years later, but in 2005 it still was struggling to achieve anything other than the most superficial relationship with the Namibian defense establishment.

46. In the early 1990s, the US Air Force conducted some very limited anthrax screening in the country. Lindeque interview.

47. As in Botswana, the aircraft also were 0-2a Skymaster aircraft equipped with FLIR systems and Rigid-hulled Inflatable Boats (RIBs). Namibia took delivery of its six reconditioned Skymasters in mid-1994, the first aircraft in its fledgling air force. In late 1994 the country received its eight H-440 RIB Zodiac boats. Deliveries involving repair parts and training continued until about 1997. Information derived from the files in the Defence Attaché Office, Windhoek, reviewed by the author in June 2005.

48. Funding totals are based on US Embassy estimates in 1998. Information derived from the files in the Defence Attaché Office, Windhoek, reviewed by the author in June 2005. The United States donated a substantial amount of equipment and provided training to members of the Namibian Defence Force, Namibian Police, and Ministry of Information and Broadcasting. The donated equipment included an armored Caterpillar tractor, mine detectors, explosives to detonate land mines, and material to promote public awareness of the mine threat. Information derived from the files in the Defence Attaché Office, Windhoek, reviewed by the author in June 2005.

49. Chapeyama interview, Esterhuizen interview, Lindique interview, Pierce interview, van den Post interview.

50. Author's interviews with, inter alia, Antonie Esterhuizen, IRDNC coordinator, Kunene Region, Windhoek, 22 June 2005; Masego Madzwamudze, IUCN Botswana Country Program Director, Gaborone, June 2005; Felix Monggae, CEO of the Kalahari Conservation Society, Gaborone, 8 March 2004; Lovemore Sola, Biodiversity Program Manager, Conservation International-Botswana, Maun, 9 June 2005; Antony Turton, Environmental Scientist at CSIR-Environmentek, Pretoria, 22 June 2004; Cornelis van den Post, Staff Scientist at the Henry Oppenheimer Okavango Research Center, Maun, 9 June 2005.

51. The primary cooperation involved an impressive effort to construct a coordinated regional peace operations capability, including the formation and training of a southern African brigade. See "6000 troops for SADC Brigade," *Southscan* (London), 29 September 2005. See also R. K. Jele, "Peacekeeping in the Context of the DOD Military Strategy," a paper presented at the Centre for International Political Studies, University of Pretoria, 2004; and the constantly updated information available from the South Africa-based Institute for Security Studies, <http://www.iss.co.za>.

52. For a useful exploration of this theme, see Oli Brown, "Environment and Peace." In Ken Conca and Geoffrey D. Dabelko, eds. *Environmental Peacemaking* (Washington: Woodrow Wilson Center Press, 2002), see the following: Ken Conca, "The Case for Environmental Peacemaking," pp. 1-22; Larry A. Swatuk, "Environmental Cooperation for Regional Peace and Security in Southern Africa," pp. 120-60; and Ken Conca and Geoffrey D. Dabelko, "The Problems and Possibilities of Environmental Peacemaking," pp. 220-33.

53. See, for instance, Ian Bannon and Paul Collier, eds., *Natural Resources and Violent Conflict: Options and Actions* (Washington: The World Bank, 2003), particularly I. Bannon and P. Collier, "Natural Resources and Conflict: What We Can Do," pp. 1-16, and "C. Crossin, G. Hayman and S. Taylor, "Where Did It Come From? Commodity Tracking Systems," pp. 97-160. See also Mats Berdal and David Malone, eds., *Greed and Grievance: Economic Agendas in Civil Wars* (Boulder, Colo.: Lynne Rienner, 2000). The "north/south" differences were given a very public face at the two most prominent gatherings of the world's environmentalists to date, the UN Conferences on Environment and Development held in Rio de Janeiro, Brazil, in 1992, and the World Summit on Sustainable Development held in Johannesburg, South Africa, in 2002. For details, see, inter alia, "UN Conference on Environment and Development (1992)," <http://www.un.org/geninfo/bp/enviro.html>; "Rio Declaration on Environment and Development," <http://habitat.igc.org/agenda21/rio-dec.html>; "Johannesburg Summit 2002," <http://www.johannesburgsummit.org>; "United Nations Environment Programme," <http://www.unep.org>; and "World Summit on Sustainable Development 2002," <http://www.globalpolicy.org/soecon/confrence/indexsustain.htm>. For a related discussion, see Brent Steel, Richard Clinton, and Nicholas Lovrich, *Environmental Politics and Policy* (New York: McGraw-Hill, 2003).

54. A significant example of this "effect" is the European Union, which grew out of very mundane cooperation over issues of energy and infrastructure, attenuating the suspicions and resentments of former belligerents and setting the stage for much broader cooperation on issues of security and governance. See Ernst B. Haas, *Beyond the Nation-State* (Stanford, Calif.: Stanford Univ. Press, 1964).